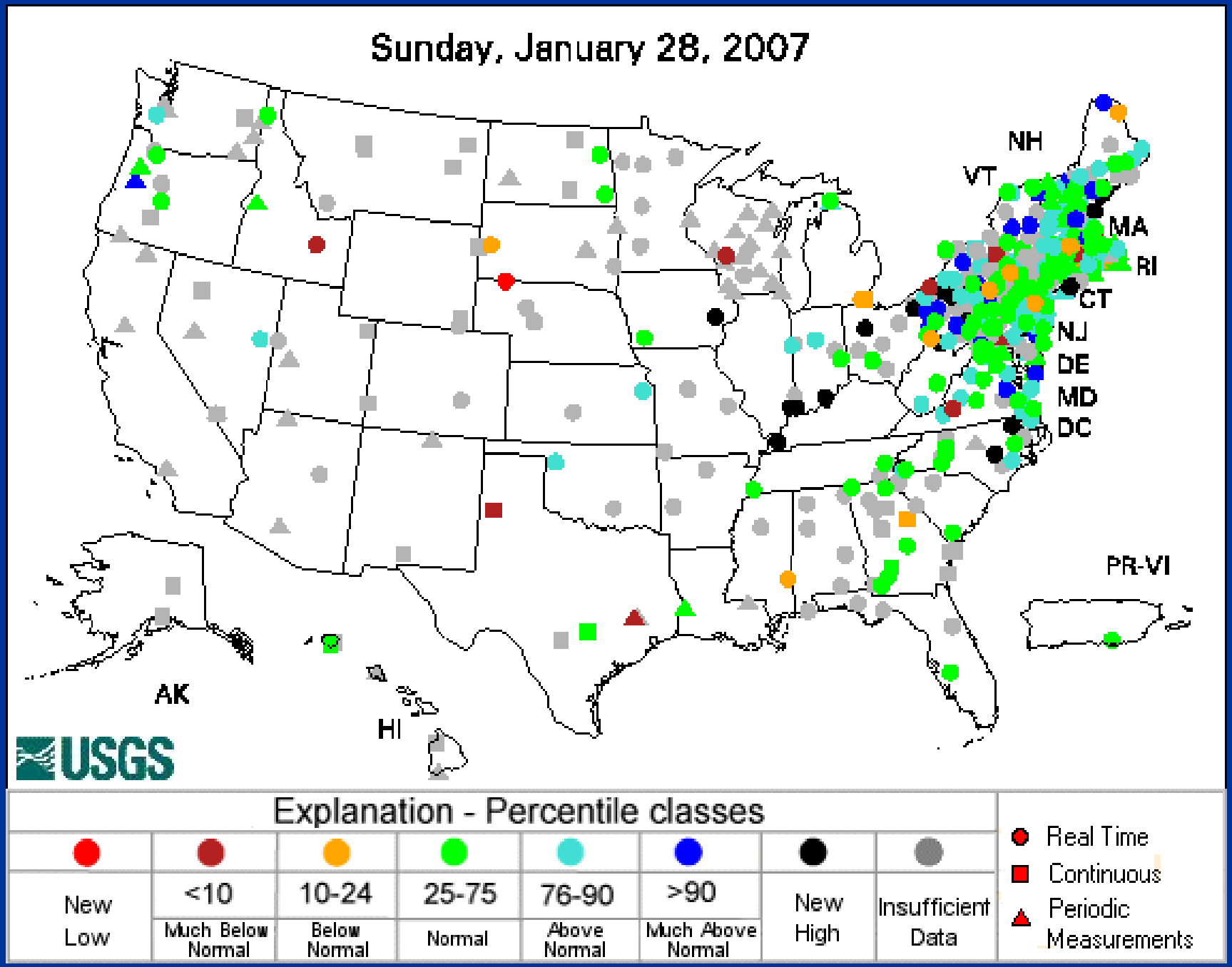
USGS Climate Response Network

U. S. Geological Survey - U.S. Army Corps of Engineers Joint Headquarters Meeting

Bill Cunningham
Office of Ground Water

January 29, 2007


Sunday, January 28, 2007
NH
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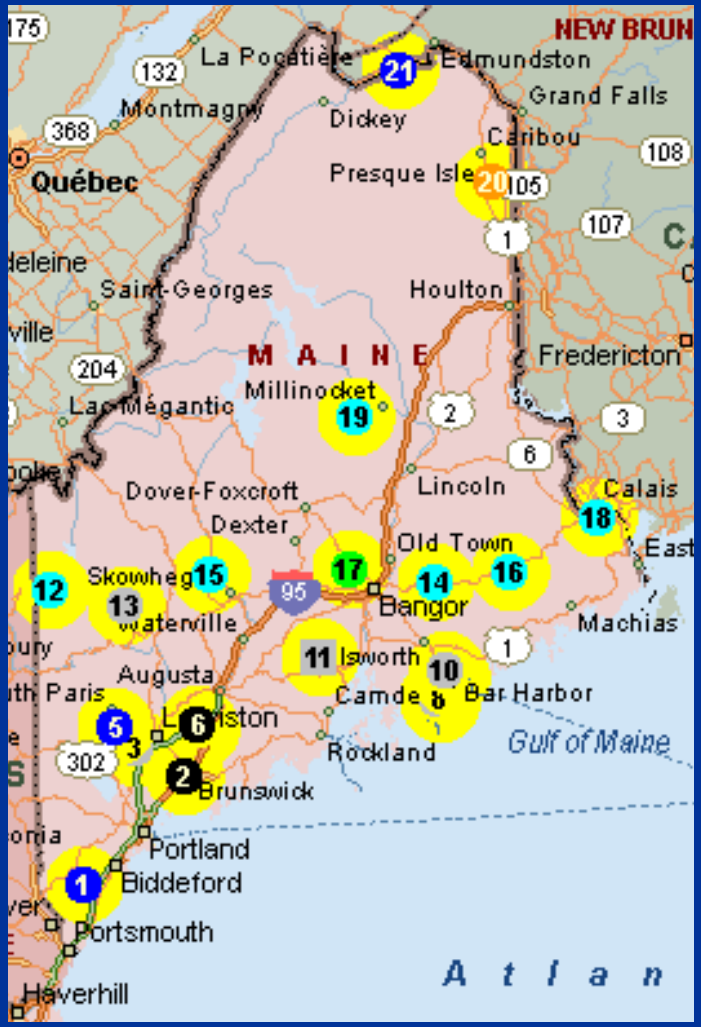
USGS
Explanation - Percentile classes
New Low
<10
Much Below Normal
10-24
Below Normal
25-75
Normal
76-90
Above Normal
>90
Much Above Normal
New High
Insufficient Data
Real Time
Continuous
Periodic Measurements

Climate Response Network

- Began with about 140 Federal wells in FY2001.
- Some Federal wells upgraded to Real Time instrumentation (now 53%).
- Expanded to include any climate response well.
- Currently consists of 554 wells (286 RT, 213 tape-down wells and 55 continuous recorders).



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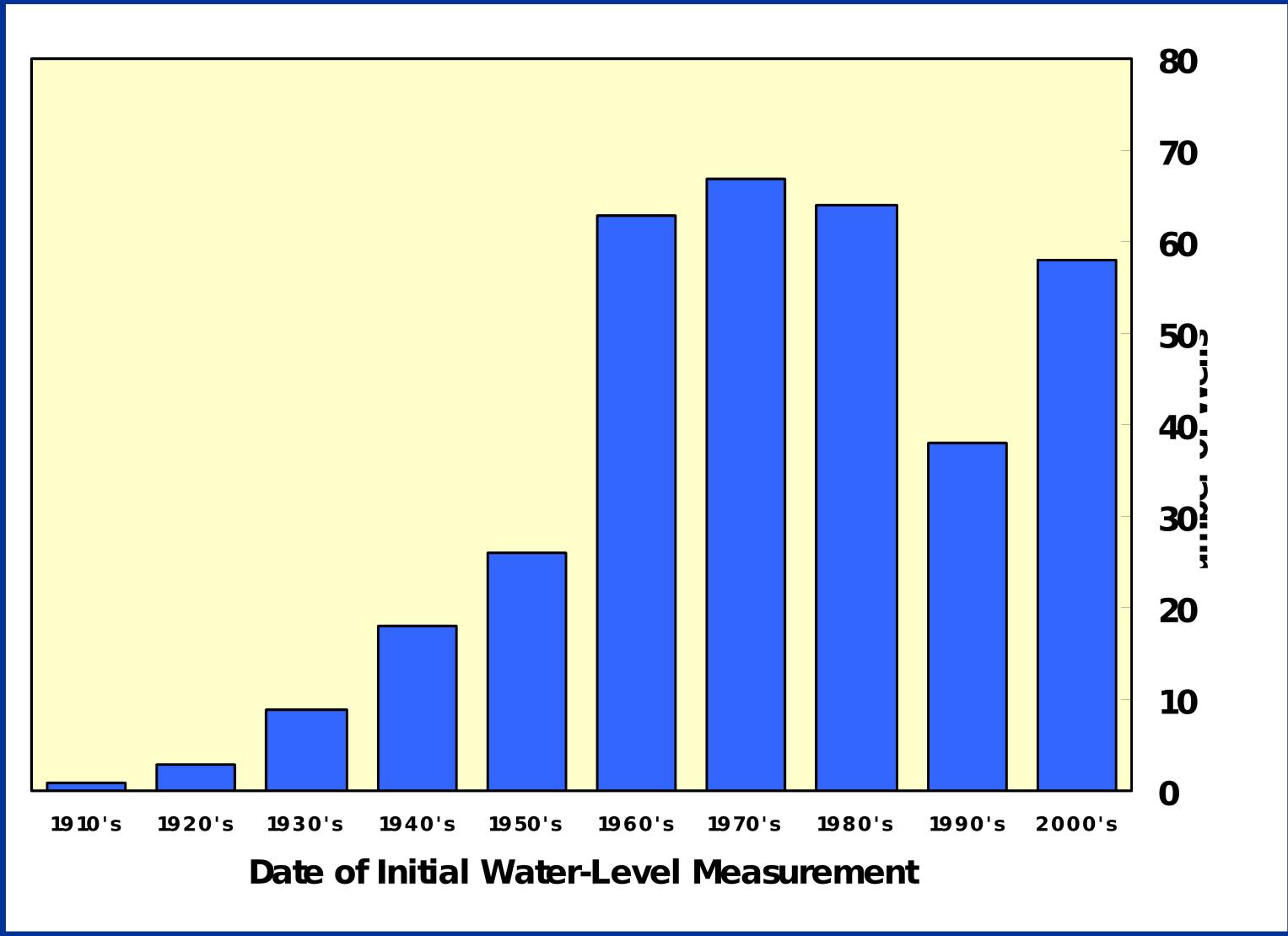
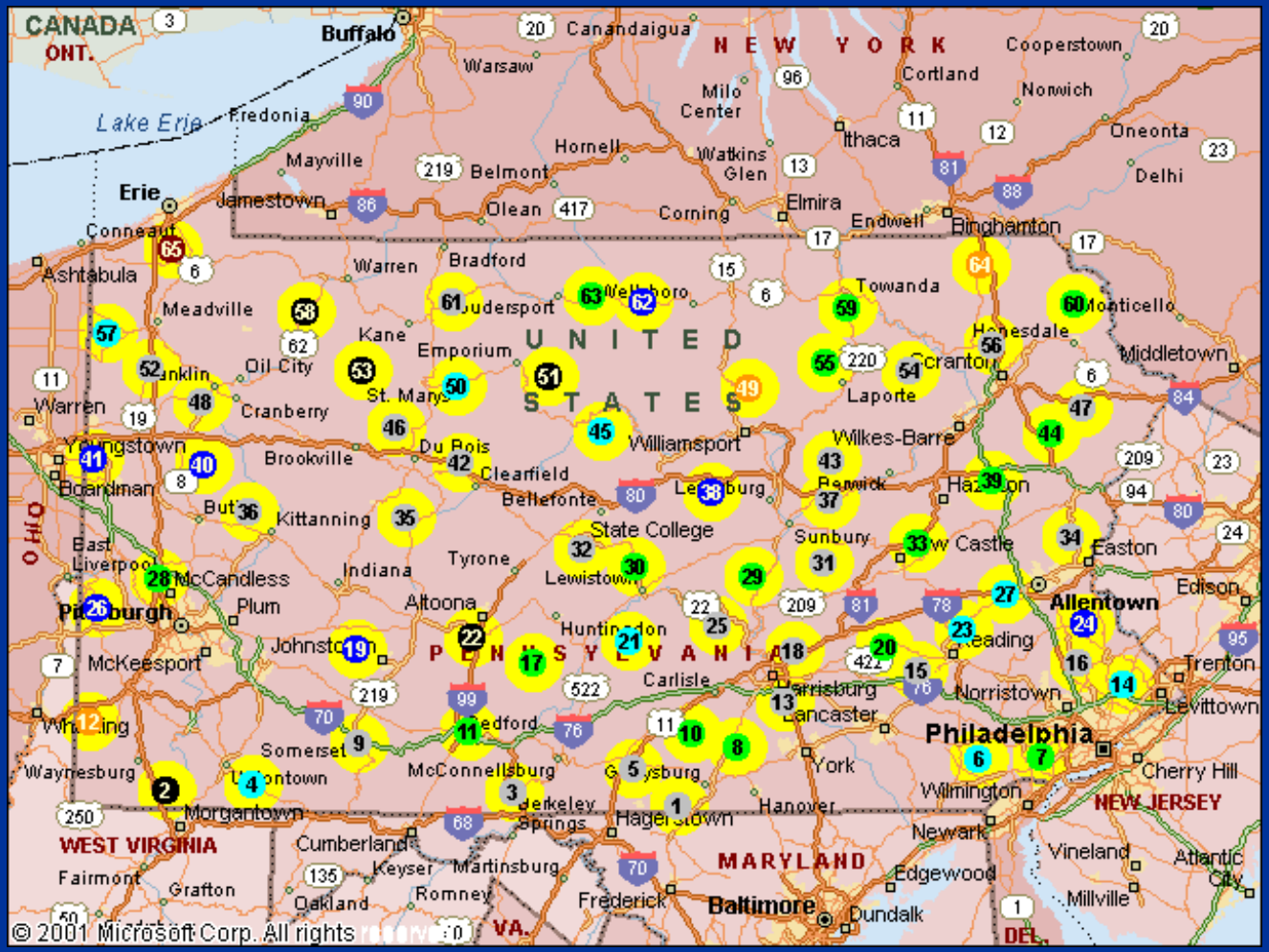
Length of Record



Pennsylvania Network



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Nevada Network

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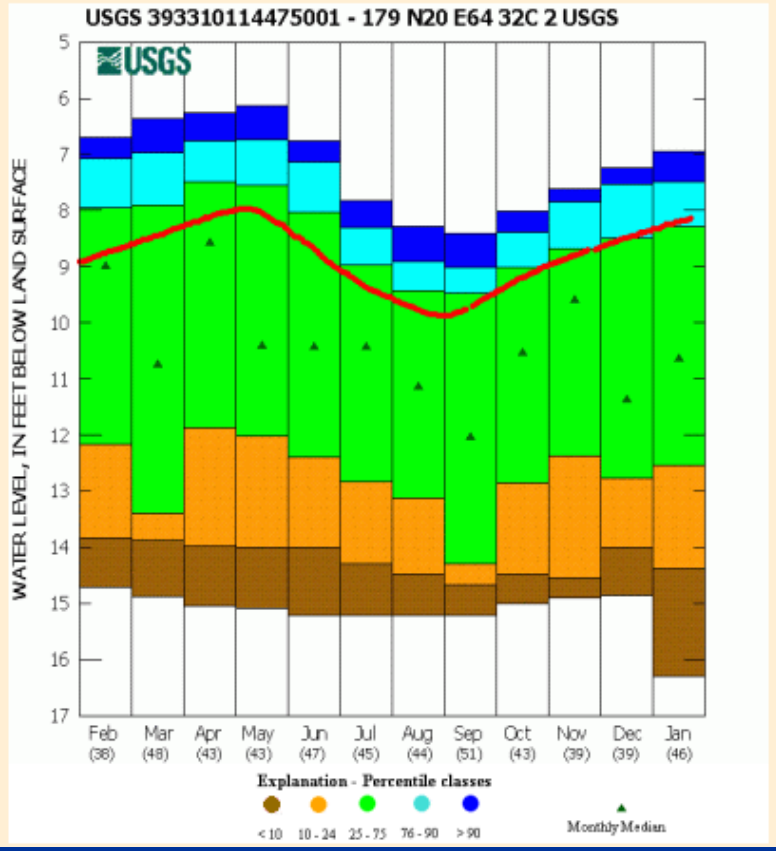
CRN Display - Nevada Well

Site Statistics



Most recent real time daily data value: 8.13 on 1/26/2007
Period of Record Monthly Statistics for 393310114475001
Water Level, Feet Below Land Surface

Note: Bold values in the table indicate closest statistic to the most recent data value.

Month	Lowest Level	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Highest Level	Number of Years
Jan	16.30	14.37	12.54	10.61	**8.28**	**7.49**	6.95	46
Feb	14.70	13.84	12.16	8.98	7.94	7.07	6.69	38
Mar	14.88	13.88	13.39	10.73	7.91	6.96	6.37	48
Apr	15.05	13.97	11.87	8.55	7.48	6.77	6.25	43
May	15.08	13.99	12.01	10.39	7.55	6.74	6.13	43
Jun	15.20	14.00	12.39	10.42	8.03	7.14	6.77	47
Jul	15.21	14.30	12.82	10.42	8.97	8.31	7.82	45
Aug	15.20	14.47	13.13	11.13	9.42	8.91	8.29	44
Sep	15.20	14.66	14.28	12.02	9.48	9.02	8.41	51
Oct	15.00	14.47	12.86	10.52	9.01	8.39	8.02	43
Nov	14.90	14.55	12.38	9.58	8.68	7.85	7.62	39
Dec	14.85	13.99	12.77	11.35	8.49	7.53	7.25	39

Note: Months with no computed statistics displayed did not meet the criteria for presentation of monthly water-level statistics.

Statistics Options

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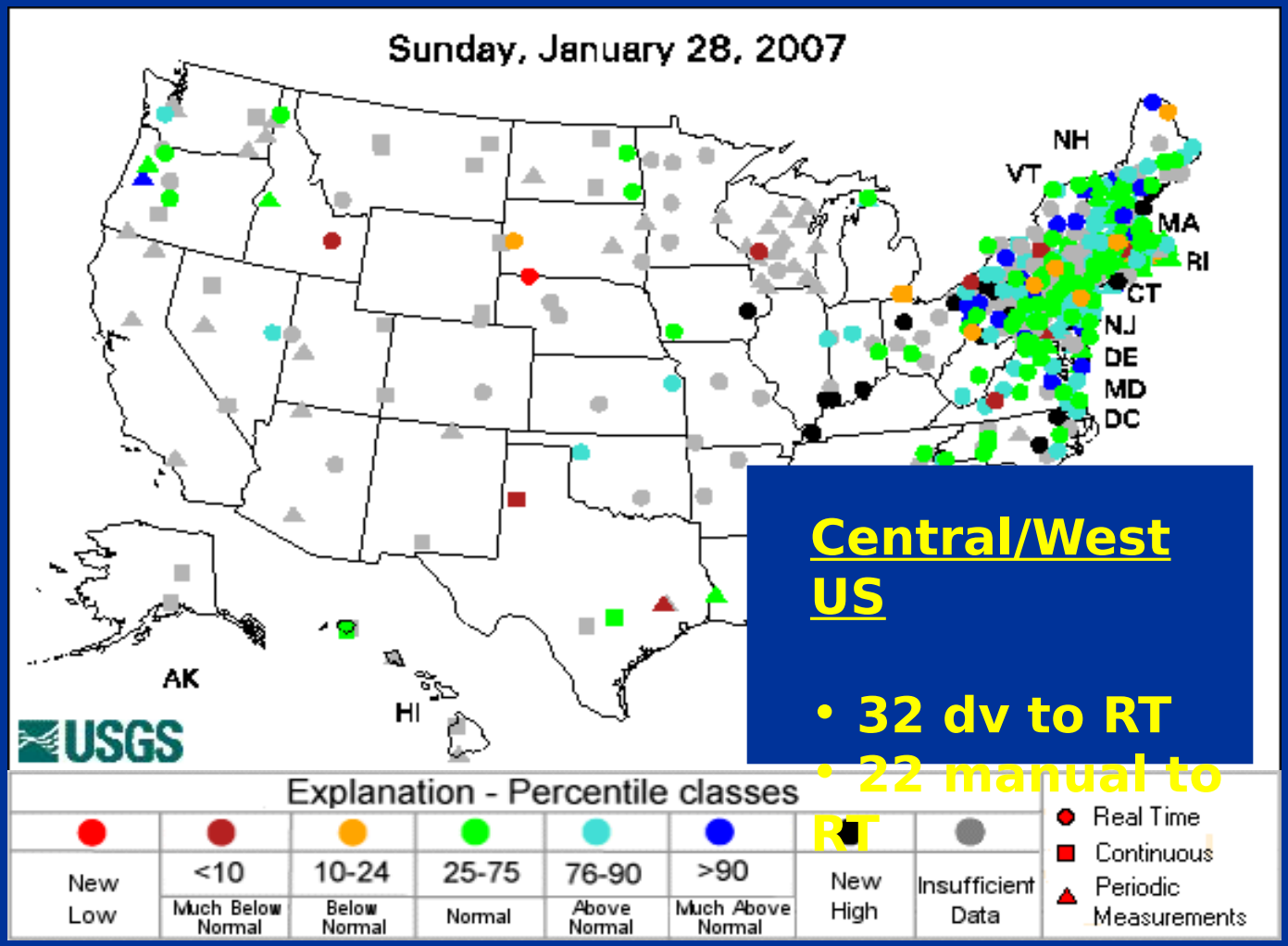
Toward a more robust western network…..



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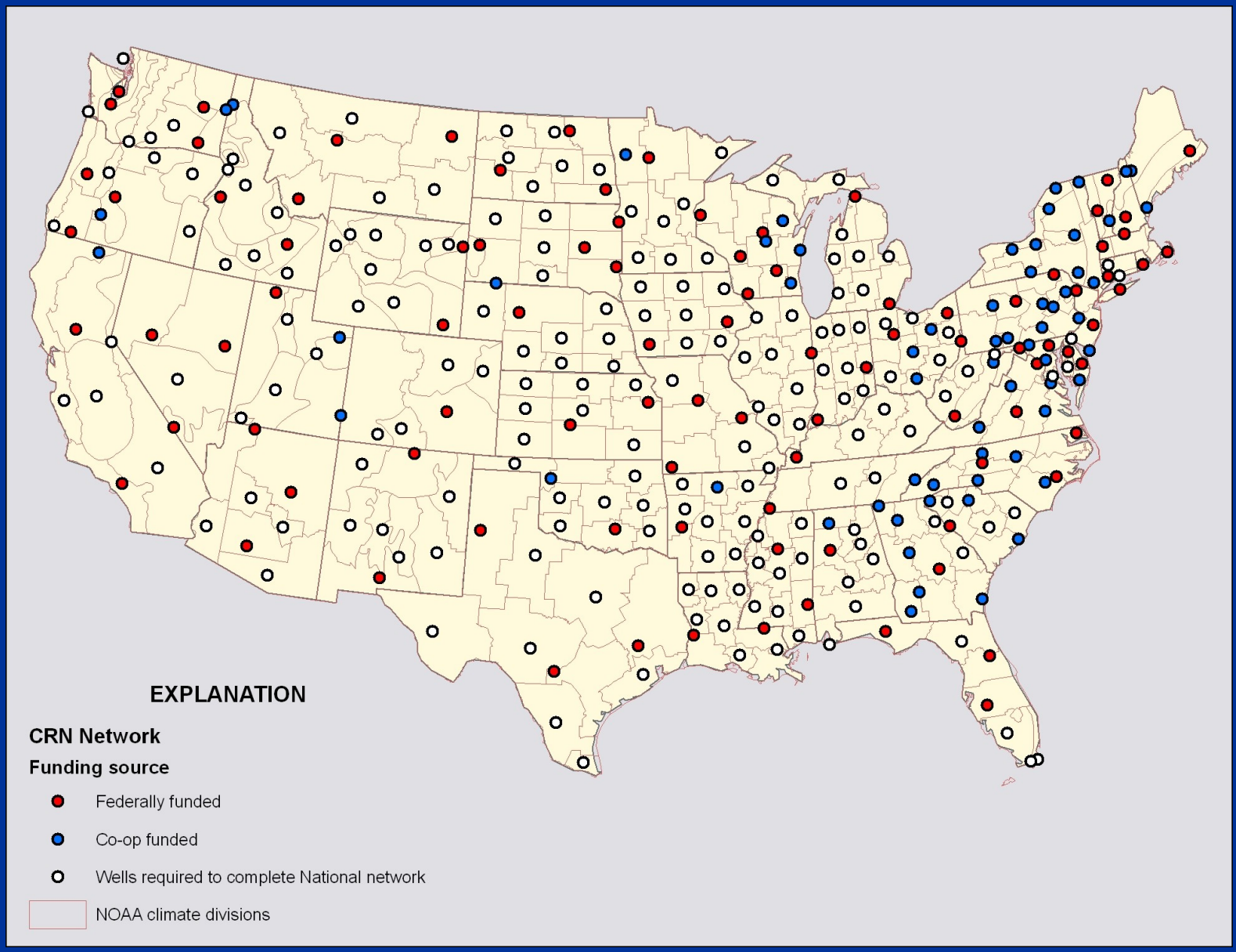
A Future Network?



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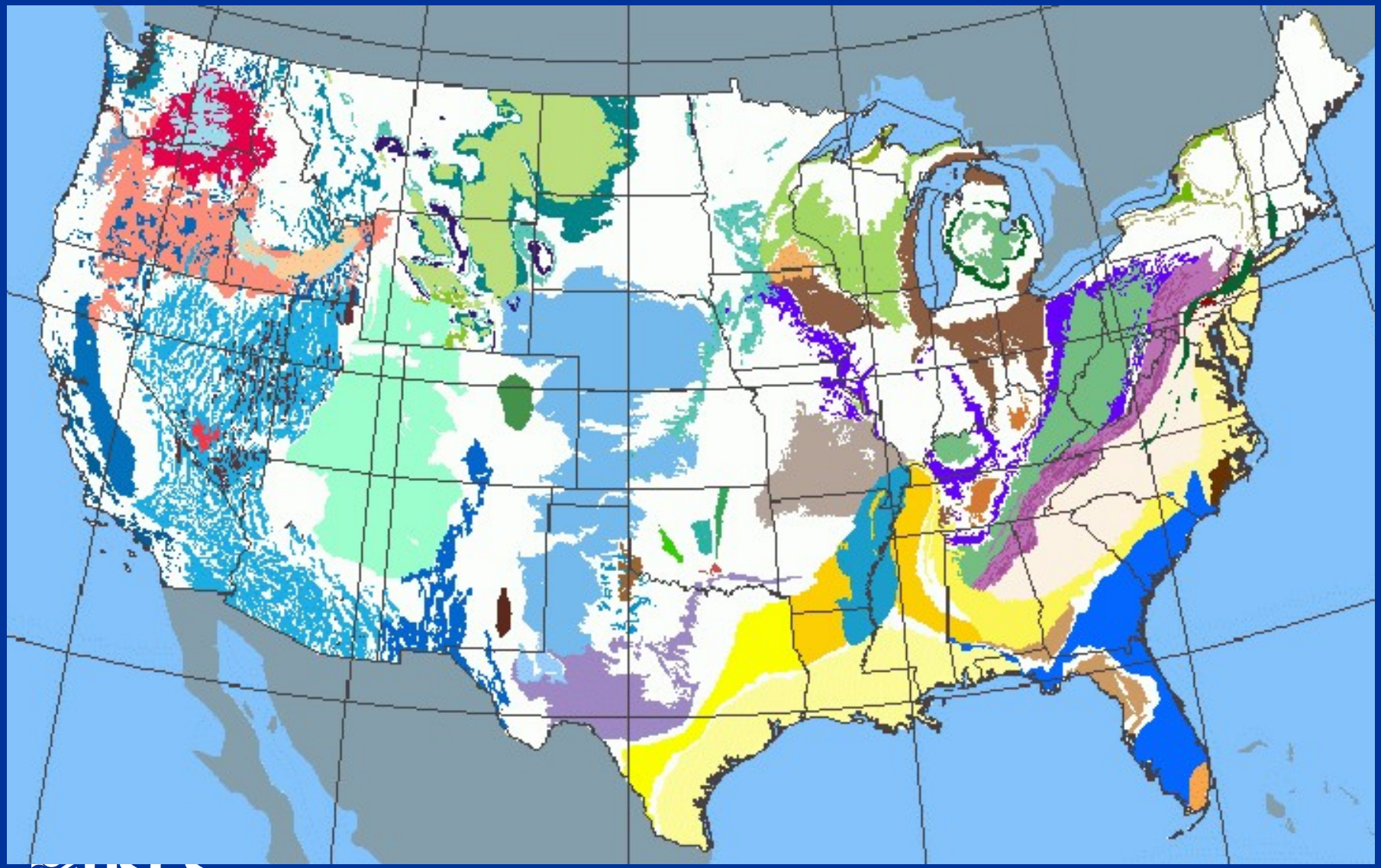

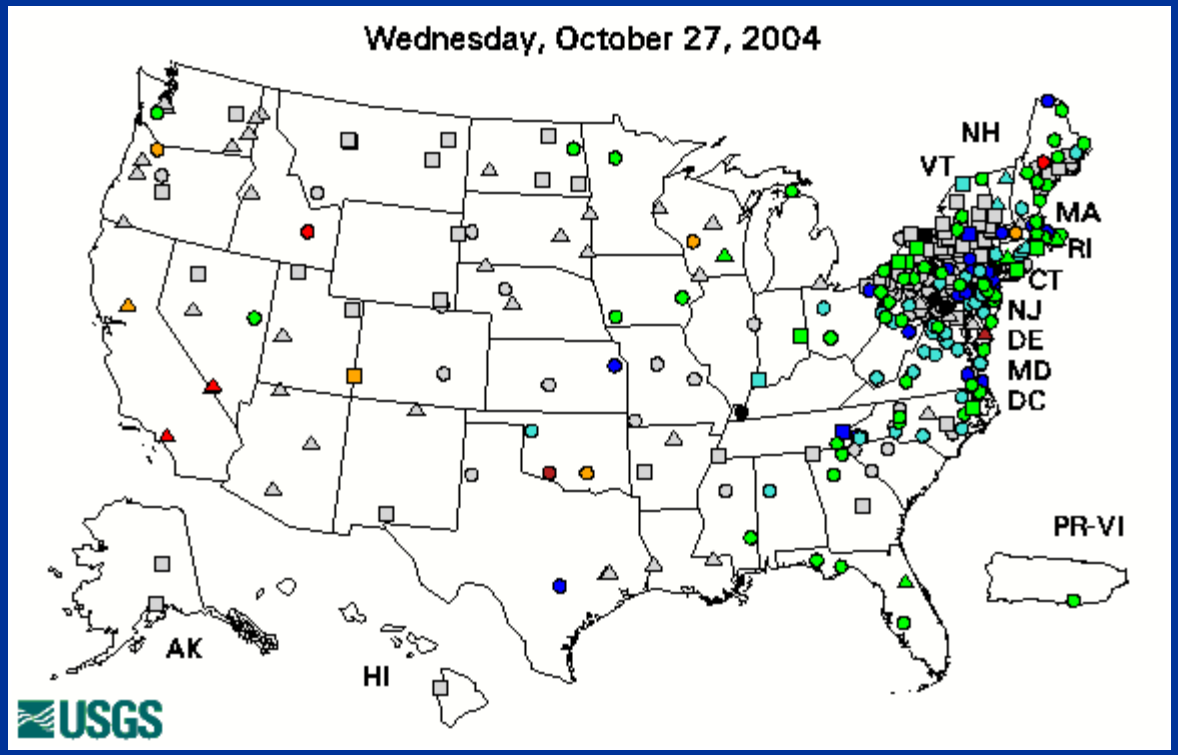
Wednesday, October 27, 2004
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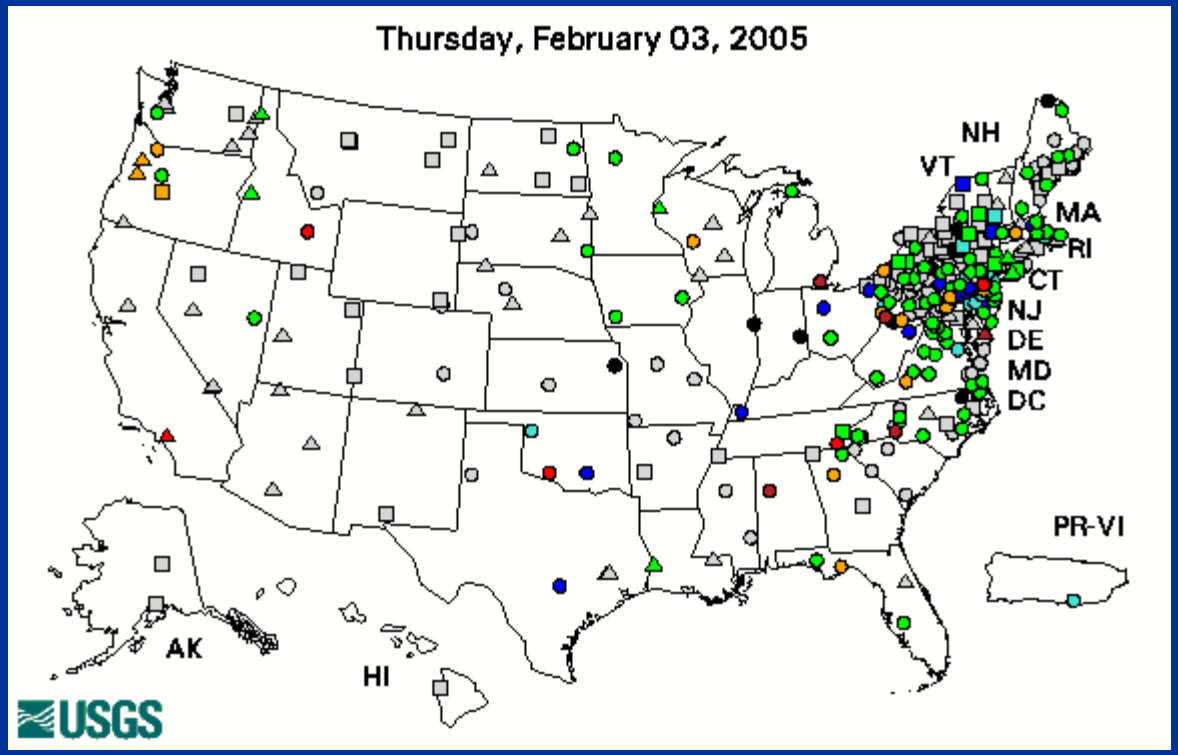
USGS

USGS


Thursday, February 03, 2005
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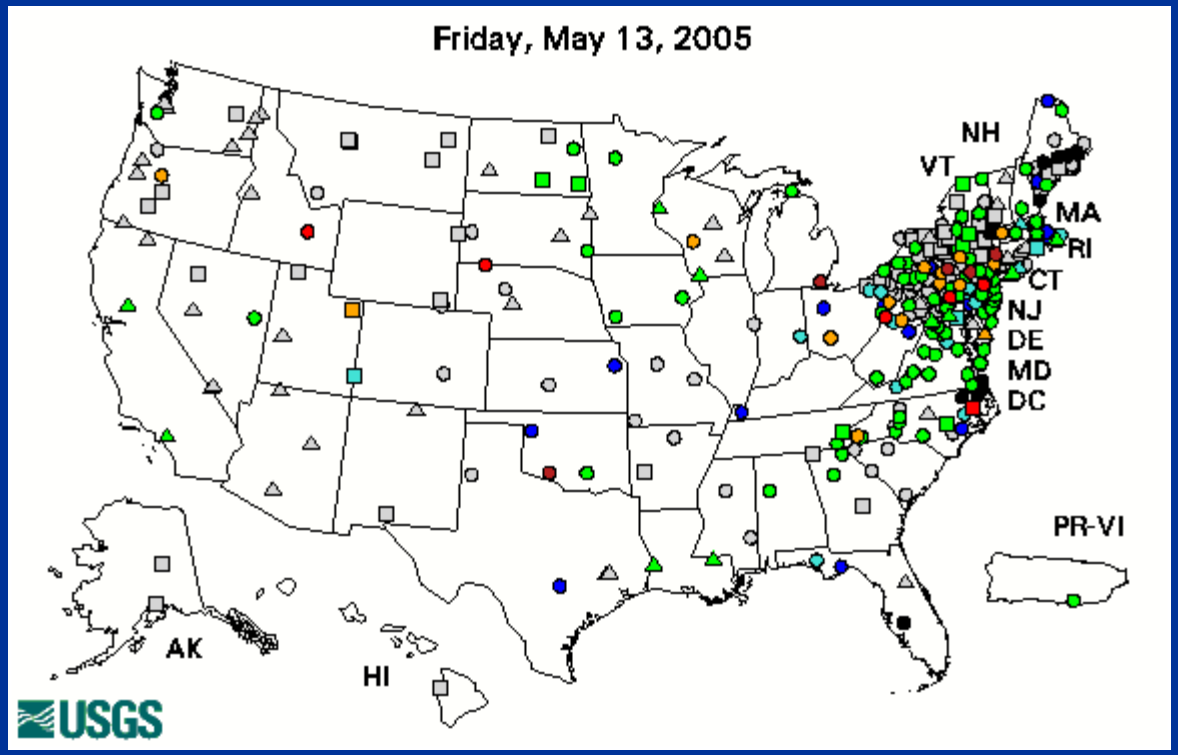
USGS

USGS



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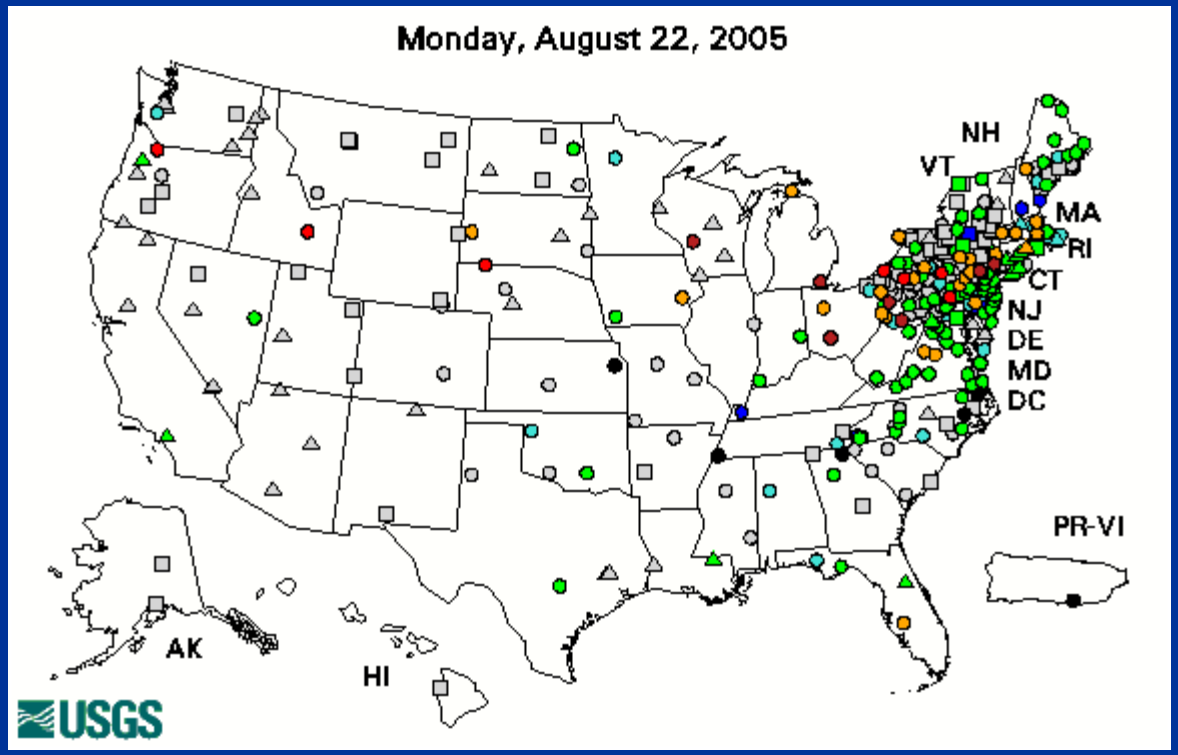

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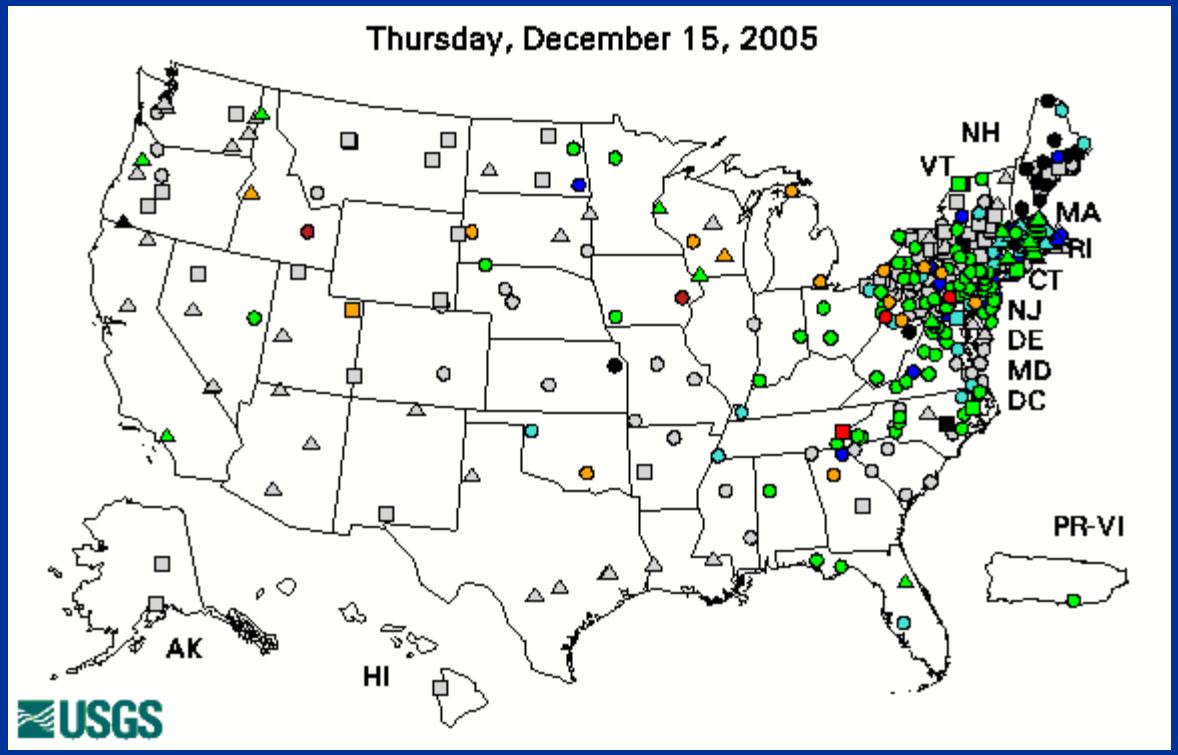
Thursday, December 15, 2005
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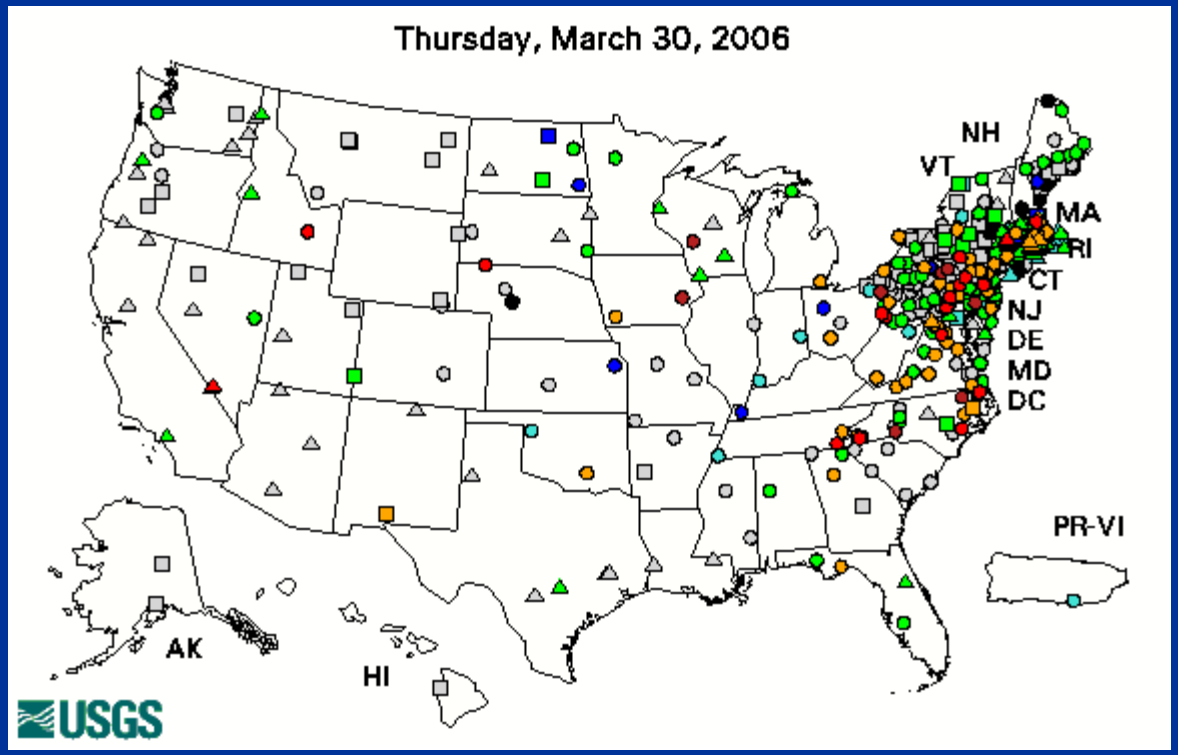

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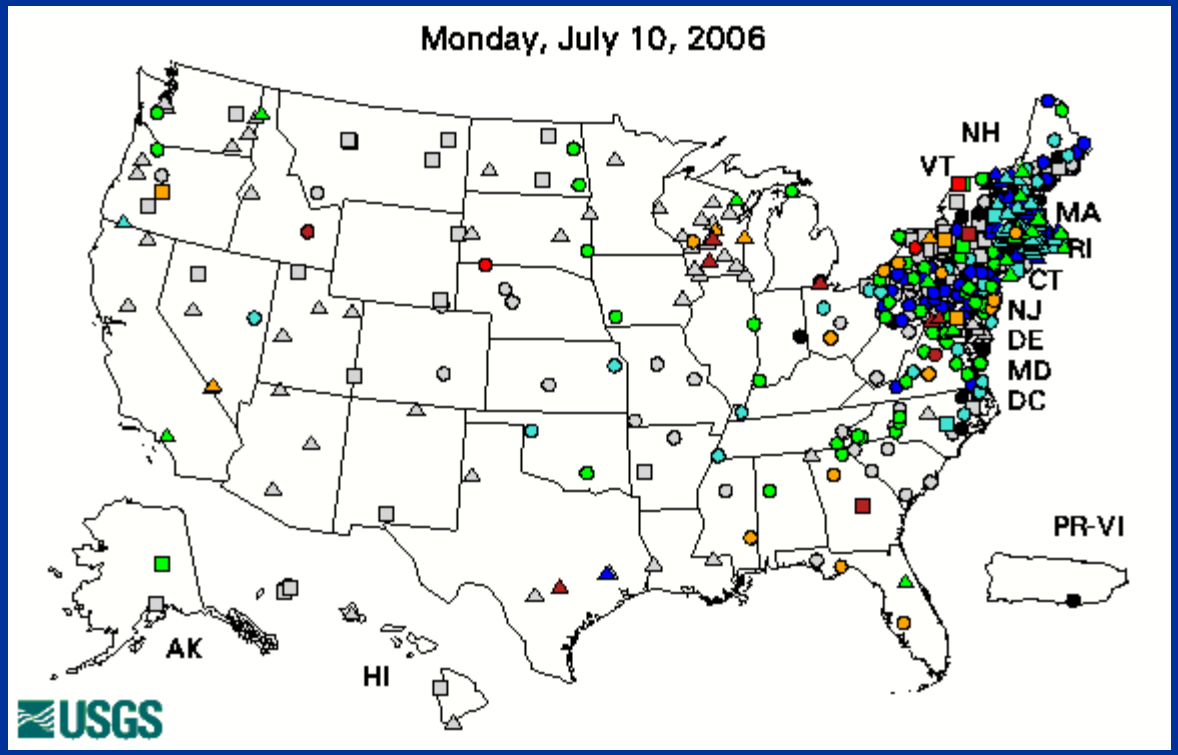

USGS

I thought I'd send this to you first, just to be sure it was responsive to what was requested (for instance, was thi
because I'm not sure what their $ limits are. Here is the information, provided as a response to questions.
Question 1: What is the estimated cost to upgrade Climate Response Network non-real-time wells to real time

Non-real-time continuous to real time	**About $6,400**
Tape-down ("periodic") to real time	**About $10,000**

Question 2: How many stations of each type need to be upgraded, and what is the total estimated cost?

USGS WRD Region	Estimated Cost	Total Wells	Periodic Wells	Continuous Wells
Western	**$270,000**	**30**	**9**	**21**
Central	**$195,000**	**24**	**13**	**11**
Southeast	**$13,000**	**2**	**2**	**0**
Northeast	**$200,000**	**21**	**3**	**18**
Total	**$678,000**	**77**	**27**	**50**

Question 3: What are the additional Operation and Maintenance costs incurred from upgrading this instrumentation?
About $300,000 would be needed in additional annual Operation and Maintenance funds for the enhanced network.

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